

Title (en)
INTERPOLATIVE ANALOG-TO-DIGITAL CONVERTER

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Application
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Priority
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Abstract (en)
[origin: WO8103725A1] An interpolative analog-to-digital converter comprising an integrator (77) for integrating the difference between an input analog signal $x(t)$ and a quantized signal $q(t)$ to develop an integrated signal, a first comparator (78) for sampling the integrated signal at a first sampling frequency and for generating first signals of one data state when the integrated signal is positive and of another data state when the integrated signal is negative, a second comparator (91) for comparing the input signal $x(t)$ to the quantized signal $q(t)$ and for sampling the results of the comparison at the first sampling frequency to develop second signals of one data state when the input signal $x(t)$ is greater than the quantized signal $q(t)$ and of another data state when the input signal $x(t)$ is less than the quantized signal $q(t)$, logic circuitry (93) responsive to the first and second signals and operative to develop a plurality of signals including a sign bit signal, a shift left signal, a shift right signal and a no shift signal, a shift register (98) responsive to the shift left signal, the shift right and the no shift signal and operative to develop a series of multi-bit binary words each having a predetermined number of bits and a magnitude determined by the shift and no shift signals, a digital-to-analog converter (80) responsive to the binary words and the sign bit signal and operative to convert the binary words into the quantized signals $q(t)$, the quantized signals $q(t)$ being positive or negative dependant upon the data state of the sign bit, and a digital signal processor (101) for digitally filtering the series of binary words and for developing binary output signals at a frequency of at least twice the highest signal frequency in the input signal $x(t)$.

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H03M 3/04

IPC 8 full level
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IEEE JOURNAL OF SOLID-STATE CIRCUITS, vol. SC-14, no. 1, February 1979 NEW YORK (US) B.A. WOOLEY et al.: "An Integrated Per-Channel PCM Encoder Based on Interpolation", pages 14-20

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